(1) said DNA fragment encodes a part of the protein, wherein said protein has protoporphyrinogen oxidase activity in plants;

(2) said DNA fragment has a sequence that can be detected and isolated by DNA-DNA or DNA-RNA hybridization to a nucleic acid sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3, wherein said DNA-DNA or DNA-RNA hybridization occurs under 2X PIPES buffer, 50% deionized formamide, 0.5% (w/v) SDS, 500µg/ml denatured sonicated salmon sperm DNA at 42°C overnight; and said DNA fragment remains hybridized after washing in 2X SSC, 1% (w/v) SDS;

D1

(3) said DNA fragment encodes the part of the protein in which an amino acid corresponding to Val13 of SEQ ID NO:1, or SEQ ID NO:2 or SEQ ID NO:3 is substituted by another amino acid; and

(4) said DNA fragment has an ability to confer resistance to protoporphyrinogen oxidase-inhibiting herbicides in plant or algal cells when expressed therein.

2. (Amended) The method according to claim 1, wherein the plant is a dicot.

D2

4. (Amended) The method according to claim 1, wherein the plant is a monocot.

Sub E2

6. (Amended) The method according to claim 1, wherein the DNA fragment encodes a protein or a part of the protein, wherein said protein has protoporphyrinogen oxidase activity in *Chlamydomonas*, and the DNA fragment encodes the protein or the part of the protein in which an amino acid corresponding to Val13 of SEQ ID NO:1 is substituted by another amino acid.

D3

Sub E3

15. (Amended) An isolated DNA fragment which has the following characteristics:

D4

(1) said DNA fragment encodes a part of the protein, wherein said protein has protoporphyrinogen oxidase activity in plants;

(2) said DNA fragment has a sequence that can be detected and isolated by DNA-DNA or DNA-RNA hybridization to a nucleic acid sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3, wherein said DNA-DNA or DNA-RNA hybridization occurs under 2X PIPES buffer, 50% deionized formamide, 0.5% (w/v) SDS, 500µg/ml denatured sonicated salmon sperm DNA at 42°C overnight; and said DNA fragment or its complement remains hybridized after washing in 2X SSC, 1% (w/v) SDS;

(3) said DNA fragment encodes the part of said protein in which an amino acid corresponding to Val13 of SEQ ID NO:1 or SEQ ID NO:2 or SEQ ID NO:3 is substituted by another amino acid; and

(4) said DNA fragment has an ability to confer resistance to protoporphyrinogen oxidase-inhibiting herbicides in plant or algal cells when expressed therein.

16. (Amended) The isolated DNA fragment according to claim 15, wherein the plant is a dicot.

18. (Amended) The isolated DNA fragment according to claim 15, wherein the plant is a monocot.

20. (Amended) The isolated DNA fragment according to claim 15, wherein the plant is the green alga *Chlamydomonas* and the DNA fragment encodes an amino acid sequence resulting from replacement of Val13 of SEQ ID NO:1 by another amino acid.

21. (Amended) The isolated DNA fragment according to any of claims 15 to 20, wherein said another amino acid is methionine.

22. (Amended) The isolated DNA fragment according to claim 20, wherein the DNA fragment has a sequence that can be isolated from genomic DNA of *Chlamydomonas*, the DNA fragment encodes a protein or a part of the protein, wherein the protein has protoporphyrinogen oxidase

activity, and a nucleotide corresponding to guanine at position 37 (G37) of SEQ ID NO:4 replaced with another nucleotide.

D6

23. (Amended) The isolated DNA fragment according to claim 22, wherein said another nucleotide is adenine.

24. (Twice Amended) A plasmid comprising the DNA fragment described in claim 15.

Please add the following new claims:

D7

--41. (New) A method of conferring resistance to protoporphyrinogen oxidase-inhibiting herbicides upon plants or plant cells, comprising introducing a DNA fragment or plasmid containing the DNA fragment into plants or cells, wherein said DNA fragment is expressed and has the following characteristics:

(1) said DNA fragment encodes a part of said protein, wherein the protein has protoporphyrinogen oxidase activity in plants;

(2) said DNA fragment has a sequence that can be detected and isolated by DNA-DNA or DNA-RNA hybridization to a nucleic acid sequence encoding SEQ ID NO:1, wherein said DNA-DNA or DNA-RNA hybridization occurs under 2X PIPES buffer, 50% deionized formamide, 0.5% (w/v) SDS, 500μg/ml denatured sonicated salmon sperm DNA at 42°C overnight; and

said DNA fragment or its complement remains hybridized after washing in 2X SSC, 1% (w/v) SDS;

(3) said DNA fragment encodes a part of a protein in which an amino acid corresponding to Val13 of SEQ ID NO:1 is substituted by another amino acid; and

(4) said DNA fragment has an ability to confer resistance to protoporphyrinogen oxidase-inhibiting herbicides in plant or algal cells when expressed therein.--

--42. (New) An isolated DNA fragment which has the following characteristics:

(1) said DNA fragment encodes a part of said protein, wherein the protein has protoporphyrinogen oxidase activity in plants;

(2) said DNA fragment has a sequence that can be detected and isolated by DNA-DNA or DNA-RNA hybridization to a nucleic acid sequence encoding SEQ ID NO:1, wherein said DNA-DNA or DNA-RNA hybridization occurs under 2X PIPES buffer, 50% deionized formamide, 0.5% (w/v) SDS, 500μg/ml denatured sonicated salmon sperm DNA at 42°C overnight; and said DNA fragment remains hybridized after washing in 2X SCC, 1% (w/v) SDS;

(3) said DNA fragment encodes a part of a protein in which an amino acid corresponding to Val13 of SEQ ID NO:1 is substituted by another amino acid; and

(4) said DNA fragment has an ability to confer resistance to protoporphyrinogen oxidase-inhibiting herbicides in plant or algal cells when expressed therein.--